

Claims

- subA2
1. An apparatus for bending glass panels, said apparatus comprising
 - an upper tier of successive mould carriages (9), having a front or back wall (11) thereof separating successive preheating stations (2, 3) and one or more successive bending stations (4a, 4b) from each other, said mould carriages (9) being adapted to be intermittently movable towards the bending station (4b);
 - a lower tier of successive mould carriages (9), having a front or back wall (11) thereof separating successive cooling stations (5, 6, 7) from each other, said mould carriages being (9) being adapted to be intermittently movable in a direction opposite to the moving direction of the upper tier carriages;
 - a number of bending moulds (12) supported by the mould carriages (9);
 - radiation heating elements (13, 14) in the ceiling of the preheating stations at least in some (3) of the preheating stations;
 - radiation heating elements (14) in the ceiling of one or more bending stations (4a, 4b);
 - an intermediate floor (15) which separates the pre-bending station (4a) upstream of the bending station (4b) and/or at least the last preheating station (3b) from a station (5) therebelow;
 - a lift mechanism (20) which constitutes a floor for the bending stations (4b) for lowering the mould carriages (9) from the upper tier to the lower tier together with bent glass panels;
 - 25 the mould carriages (9) being provided with an open-structured or otherwise highly heat transmitting floor (10), **characterized** in that on top of the intermediate floor (15) are radiation heating elements (16) positioned below the level defined by a floor (10) of the mould carriage (9).
 - 30 2. An apparatus as set forth in claim 1, **characterized** in that the radiation heating elements (16) comprise open resistances.

3. An apparatus as set forth in claim 1 or 2, **characterized** in that the radiation heating elements (16) are divided for resistance rod elements (16a, 16b, 16c) adjacent to each other in a lateral direction of the station (3b, 4a) and having individually adjustable heating effects.

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4. An apparatus as set forth in any of claims 1-3, **characterized** in that the radiation heating elements (16) lie on top of the intermediate floors (16) of at least the final preheating station (3b) and at least one pre-bending station (4a).

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5. An apparatus as set forth in any of claims 1-4, **characterized** in that the radiation heating elements (16) have a lengthwise direction which is the same as that of the furnace, and that the radiation heating elements (16b) present in the middle section in the lateral direction of the furnace have a heating effect which is individually adjustable relative to the heating effect of the heating elements (16a and 16c) on either side thereof, the heating effects below the middle section and end sections of a pair of glass panels to be bent being adjustable relative to each other.

6. An apparatus as set forth in claim 1 or 2, **characterized** in that the floor of one or more preheating stations (3a) is open and provided with heating resistances, with reflectors underneath the latter.

7. An apparatus as set forth in claim 1, comprising preheating stations (2) in the upstream end of the upper tier, in which the heating of glass panels is effected by the application of forced convection receiving its thermal energy from glass panels in the process of cooling in the downstream stations (7) of the lower tier, **characterized** in that heating resistances are mounted on top of convectional blowpipes or boxes present on the floor of the preheating stations (2).